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CURRENT LITERATURE

BOOK REVIEWS

An American memorial to Darwin

The American Association for the Advancement of Science organized at its Baltimore meeting last Christmas week a worthy celebration of the centennial of DARWIN'S birth and the semicentennial of the publication of the *Origin of species*, part of which consisted of a series of ten addresses by prominent biologists, on topics pertinent to the occasion. These addresses have been published as a memorial volume, under the title *Fifty years of Darwinism*.[1] Of the ten only two are by botanists: "The theory of natural selection from the standpoint of botany," by JOHN M. COULTER, and "The direct influence of environment," by D. T. MACDOUGAL. Yet all will have a definite interest for any botanist who is alive to the questions of evolution.

Professor COULTER, after pointing out the indebtedness of botany to DARWIN for much besides the theory of natural selection, avows that he speaks not for botanists as a whole, but as one "who has had some experience in dealing with facts that enter into phylogenies." This leads him to set forth some of the difficulties encountered, such as the origination of those broad characters that distinguish great groups, and the so-called "adaptations" which prove to be useless or even harmful. The main illustrations are drawn from the gymnosperms, of which group he is a master; and the array is certainly formidable.

Dr. MACDOUGAL discusses the reaction of organisms when subjected to changes in the environment, and the mechanism by which the structural and formal alterations are effected. He cites the recent experiments of RIDDLE, GAGE, TOWER, GAGER, and himself, all of which are well known and have awakened the greatest interest. He believes that GAGER'S experiments and his own indicate that the primary effect is wrought upon the chromosomes of the germ cells; a conclusion that finds support also from GATES'S work on Oenothera and from animal cytology.—C. R. B.

The distinctly zoological addresses are: "Isolation as a factor in organic evolution," by DAVID STARR JORDAN; "The cell in relation to heredity and evolution," by E. B. WILSON; "The behavior of unit characters in heredity," by W. E. CASTLE; "Mutation," by C. B. DAVENPORT; "Adaptation," by CARL

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[1] Fifty years of Darwinism: modern aspects of evolution. Centennial addresses in honor of CHARLES DARWIN before the American Association for the Advancement of Science, Baltimore, Friday, January 1, 1909. 8vo. pp. vi+274. *pls. 5. fig. 1.* New York: Henry Holt & Co. 1909. $2.00.

H. EIGENMANN; "Darwin and paleontology," by H. F. OSBORN; and "Evolution and psychology," by G. STANLEY HALL.

These addresses, by men whose work and writings are concerned with various phases of animal life, deal with problems of wide interest, but in the main they are from the point of view of the zoologist rather than of the botanist, and the material for illustration is largely drawn from animal biology. One gets the impression in reading the different essays that often the point of view of the authors is all too narrow; it is that of the advocate or pleader seeking undue prominence for a certain phase of the evolution problem, rather than that of a man of science considering the phenomena from a broad, impartial point of view.

On the whole, however, the papers are clear, concise, and very much to the point. Due allowance being made for the standpoint from which the individual author took his departure, they present very fairly the average opinions held by the various workers in different fields today. Probably the lay reader will get from the volume what every biologist knows to be true, that the problems of evolution are no longer in the simple state where one factor can be held to explain everything, but that many more factors must be brought in and all harmonized before the evolution question will assume a more unified aspect. He can hardly fail to see clearly that the fact of evolution is beyond dispute, and that it is the method of evolution which is now under discussion.—W. L. TOWER.

Report of American Breeders' Association

The Fifth Annual Report of the American Breeders' Association[2] maintains the high standard which has been shown by all the previous reports of this important organization, and without question contains the most important body of experience and speculation dealing with matters of heredity and breeding as well as of the new science of "eugenics" to be found in America. The present volume is in several respects an improvement over any previous one. A number of useful summaries of breeding work in different crops are given in the form of committee reports, the most important of these dealing with alfalfa, apples, wheat, sugar cane, and tobacco. Special methods for the conduct of practical breeding work in corn, alfalfa, wheat, and sorghum are given. Of over eighty separate articles contained in the volume nearly half have to do with plant breeding, about one-third with animal breeding, and smaller numbers with eugenics, the theory of heredity, and other allied subjects. The most important papers, from a theoretical point of view, are "Some observations in telegony" by E. H. RILEY; "Another mode of species forming," by LUTHER BURBANK; "Some cytological aspects of cotton breeding," by LAWRENCE BALLS; "Characteristics of Wealthy apple seedlings," by W. T. MACOUN; "Clonal or bud-variation," by HERBERT J. WEBBER; "What are 'factors' in Mendelian explanations," by T. H. MORGAN; "Factors for mottling in beans," by R. A. EMERSON; and "The effect of different methods of selection on the fixation of hydrids," by W. J. SPILLMAN. There are

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[2] American Breeders' Association. Vol. 5. pp. 420. July 1909. Washington, D. C.